

## CLAIMS

*Sub A'*  
1. A digital broadcast demodulator, being an apparatus for receiving digital broadcast by transmitting digital video and audio information coded by digital VSB modulation system in packet form, comprising:

a circuit for establishing the synchronous signal in reception data by processing the most significant bit (MSB) showing the positive or negative sign of the reception transport packet data.

2. A digital broadcast demodulator of claim 1, wherein the circuit for establishing the synchronous signal in reception data comprises:

a synchronous code pattern detecting circuit for detecting the segment synchronous code pattern from the most significant bit signal of the reception packet data,

a symbol number counter circuit for counting the number of symbol data in the reception packet data,

a synchronism detection establishing circuit for judging the true segment synchronous code pattern by obtaining the segment synchronous code pattern from said synchronous code pattern detecting circuit when said symbol number counter circuit finishes counting of a specified number, and

a synchronism detection protection counter circuit for detecting and establishing the segment synchronous signal in the reception data from the output of said synchronous code pattern detecting circuit and count-up of specified number of said symbol number counter circuit.

3. A digital broadcast demodulator of claim 2, wherein the most significant bit signal of the reception packet data is processed so as to issue a signal showing the start position of the synchronous signal in the data and a signal of detecting and establishing the synchronous signal.

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*Sub A<sup>2</sup>*

4. A digital broadcast demodulator, being an apparatus for receiving digital broadcast by transmitting digital video and audio information coded by digital VSB modulation system in packet form, wherein the differential value of synchronous signals of reception packet data which should be of same level by nature is determined so as to detect the clock phase error of transmission data, and the clock is regenerated by phase control on the basis of this phase error.

*Sub A<sup>2</sup>*

5 6. A digital broadcast demodulator of claim 4, further comprising a clock phase error detecting circuit for issuing a clock phase error of transmission data by determining the difference of the N-th and N+1-th ( $N > 1$ ) synchronous signals which should be of same level by nature, from the code pattern detection signal of synchronous signal and signal showing position of synchronous signal.

15 7. A digital broadcast demodulator of claim 4, further comprising:

a circuit for processing the difference of all reception data, a circuit for detecting the differential value only for the data coinciding with the code pattern of synchronous signal, and

20 a circuit for detecting the differential value only for the data of synchronous signal.

*Sub A<sup>3</sup>*

25 8. A digital broadcast demodulator, being an apparatus for receiving digital broadcast by transmitting digital video and audio information coded by digital VSB modulation system in packet form, wherein the clock is regenerated by detecting the clock phase error from the differential value of the data which should be of same level by nature coinciding with the synchronous signal code pattern of reception data until the synchronous signal of reception packet data is detected and established.

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30 9. A digital broadcast demodulator, being an apparatus for receiving digital broadcast by transmitting digital video and audio

information coded by digital VSB/modulation system in packet form,

wherein the synchronous signal in the received packet data is detected, the difference between the detected data value of synchronous signal and the reference is determined, and the AGC is realized on the basis of this difference.

9. A digital broadcast demodulator of claim 8, further comprising an AGC error detecting circuit for detecting a specific position of synchronous signal from the signal showing detection and establishment of synchronous signal in the reception data and the signal showing position of synchronous signal, and issuing the error of the synchronous signal at this specific position and the reference value as a control signal.

10. A digital broadcast demodulator, being an apparatus for receiving digital broadcast by transmitting digital video and audio information coded by digital VSB modulation system in packet form,

wherein the AGC is realized by detecting the amplitude difference from the envelope of analog detected base band signal until the synchronous signal of reception packet data is detected and established.